2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts on resources in the project area may result from residential, commercial, industrial, and highway development as well as agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as the displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to the potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

2.4.2 Methodology

The cumulative impact analysis methodology utilized was based on the eight-step process set forth in the California Department of Transportation (Caltrans) *Standard Environmental Reference (SER) Guidance for Preparers of Cumulative Impact Analysis* (2005), which was developed in conjunction with Federal Highway Administration (FHWA) and U.S. Environmental Protection Agency (U.S. EPA). The eight-step process is as follows:

- Identify resources to be analyzed
- Define the study area for each resource (i.e., Resource Study Area [RSA])
- Describe the current health and historical context for each resource
- Identify the direct and indirect impacts of the proposed project
- Identify other reasonably foreseeable actions that may affect each resource
- Assess potential cumulative impacts
- Report the results
- Assess the need for mitigation

2.4.3 Resources Excluded from Cumulative Impacts Analysis

As specified in the Caltrans guidance, if a proposed project would not result in a direct or indirect impact on a resource, it would not contribute to a cumulative impact on that resource or need to be evaluated with respect to potential cumulative impacts. The cumulative impact analysis focuses only on 1) resources that would be substantially affected by the proposed project and 2) resources that are currently in poor or declining health or at risk, even if project impacts would be relatively small. These resources are discussed briefly below.

- **Coastal Zones:** The proposed project is not located within or in the vicinity of the coastal zone. Therefore, the proposed project would not contribute to cumulative adverse impacts on coastal zones.
- **Wild and Scenic Rivers:** According to the Bureau of Land Management, there are no wild and scenic rivers in the project area. Therefore, the proposed project would not contribute to cumulative adverse impacts on wild and scenic rivers.
- **Farmlands or Timberlands:** No land within or adjacent to the project area is designated as a Timber Production Zone. According to the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), there is no land designated as prime farmland, farmland of statewide importance, unique farmland, or grazing land within or immediately adjacent to the project area (DOC 2014). The project area and surrounding environment is largely urban and built-up land. The nearest determined important farmland is a 20-acre nursery classified as unique farmland in the city of Anaheim that is 0.25 mile east of the eastern terminus of the project area. The next nearest determined important farmland is a 10-acre parcel of vacant land (as of May 2018) classified as prime farmland, located 0.70 mile northeast of the northernmost part of the project area along North Tustin Avenue in the city of Anaheim. The proposed project would not contribute to cumulative adverse impacts on farmlands or timberlands.
- **Land Use:** The freeway improvements under the Build Alternative are consistent with local and regional goals to improve traffic operations and reduce congestion in the area. The project improvements would occur in an area that is already designated and used for transportation. Furthermore, the proposed project would require only a minor right of way acquisition (approximately 0.03 acre). Therefore, no adverse cumulative impacts related to land use are expected.
- **Parks and Recreation:** The Build Alternative would not permanently affect parks, recreational facilities, or Section 4(f) resources. During construction, the Santa Ana River Trail/Bicycle Path would be closed. However, a detour would be provided for trail users. Furthermore, no other projects that could affect the Santa Ana River Trail/Bicycle Path in the project area during construction have been identified. Therefore, the proposed project would not contribute to cumulative adverse impacts related to parks and recreation.
- **Growth:** The Build Alternative would improve existing and future traffic operations, reduce congestion, and accommodate existing and future planned growth. As discussed in Section 2.1.2 there is limited developable land within the project area. The proposed project would not induce growth or remove obstacles to growth in the area. Therefore, the proposed project would not contribute to cumulative adverse impacts related to growth.
- **Community Impacts:** The RSA does not exhibit a pronounced degree of community character and cohesion overall. The Build Alternative would not divide an established community or substantially modify the character of the area. The project would be consistent

with the circulation/mobility and land use elements of the general plans for the cities of Anaheim, Placentia, Fullerton, and Orange. Improvements would be made mostly within the right of way of the existing highway. No full acquisitions, residential displacements, or non-residential displacements are proposed under the Build Alternative. Because the RSA is largely developed and the project would not change the fundamental nature of the community, the project's contribution to cumulative impacts would be minimal.

- **Visual/Aesthetics:** The Build Alternative would not substantially change existing views of or from State Route (SR) 91 or other transportation facilities associated with implementation of the proposed project. Measures **VIS-1** through **VIS-5** would be implemented to minimize light and glare impacts, screen direct views of industrial uses along the project corridor, landscape the project area consistent with existing vegetation and landscaping, and apply aesthetically pleasing architectural treatments. The Build Alternative would not substantially alter existing views or the visual characteristics of the project area. Therefore, the proposed project would not contribute to cumulative adverse effects on visual resources.
- **Utilities/Emergency Services:** With the exception of short-term effects during construction, the Build Alternative would not result in adverse effects on utilities and emergency services. The proposed project would include implementation of a Transportation Management Plan (measure **PF T-1** in Section 2.1.4), which is standard practice on all Caltrans projects and would ensure that substantial impacts on emergency service providers would not occur during construction. Because the proposed project would not result in substantial adverse impacts on utilities or emergency services, it would not contribute to cumulative adverse effects on utility facilities and emergency service providers.
- **Traffic and Transportation/Pedestrian and Bicycle Facilities:** The Build Alternative would reduce travel times and delay through the project corridor, improve local arterial intersection operation, and have no long-term effect on bicyclist and pedestrian travel. Operation of the Build Alternative would not result in cumulatively considerable adverse impacts. Construction of the Build Alternative could coincide with many of the related projects identified in Table 2.1.1-3. The impacts of those projects, in combination with the impacts of the Build Alternative, could result in additional temporary delays that were not identified in the project-level analysis. However, the implementation of measure **PF T-1**, the contribution of the Build Alternative to a cumulative impact during the construction period would not be considerable.
- **Cultural Resources:** Caltrans, pursuant to Section 106 PA Stipulation IX.A, has determined that a finding of *no historic properties affected* is appropriate for this undertaking because there are no historic properties in the Area of Potential Effects (APE). As such, permanent impacts are not expected as a result of implementation of the Build Alternative. Furthermore, a letter was received on August 30, 2018, from Julianne Polanco, the State Historic Preservation Officer, stating concurrence that the resources identified in Section 2.1.7 are not eligible for the National Register of Historic Places. For these reasons, cumulative impacts are not anticipated to occur under the Build Alternative.
- **Hydrology and Floodplain:** The Build Alternative would not result in substantial encroachment in any floodplain within the project area, nor would it result it a substantial change in the water surface elevation. The largest increase in water surface elevation would be a 0.03-foot change in one area of the Santa Ana River. The base flood would still be contained within the Carbon Canyon Diversion Channel and Santa Ana River. Therefore, the proposed project would not contribute to cumulative adverse effects related to hydrology and floodplains.

- **Water Quality and Stormwater Runoff:** When the proposed impervious surface (16 acres, changing the existing 223 acres to 239 acres under the Build Alternative) is compared with the total watershed area (more than 1,696,000 acres in the Santa Ana River watershed), the additional impervious surface would be less than 0.001 percent of the watershed area. Construction of the additional impervious surface under the proposed project could result in waste load allocations being exceeded with respect to approved Total Maximum Daily Loads (TMDLs) and impairments in the California Clean Water Act Section 303(d)-listed downstream water bodies. However, implementation of appropriate project features, such as design pollution prevention best management practices (BMPs) and treatment control BMPs, to treat targeted design constituents would adequately address the potential cumulative impacts of construction and long-term maintenance and operation of the proposed project. As such, the proposed project is not anticipated to contribute to cumulative impacts.
- **Geology/Soils/Seismic/Topography:** The potential impacts of the Build Alternative related to geologic conditions and soils would be avoided or minimized with implementation of geotechnical design features and soil BMPs. As a result, the Build Alternative would not contribute to cumulative adverse impacts related to geology and soils.
- **Hazardous Waste/Materials:** The RSA includes the area within 0.5 mile of each side of the project site. Based on information obtained from the Initial Site Assessment (ISA), the project site, both currently and historically, occupied parcels 360-071-14, 360-071-28, and 360-071-24 and was identified in the ISA as part of the Land Disposal Site, Leaking Underground Storage Tank, Spills Leaks Investigation and Cleanup, and EnviroStor databases. The aforementioned parcels were associated with a former landfill, which is currently a recycling facility and rail yard. Because of historic and current land uses, the aforementioned parcels were characterized as presenting a potential hazardous waste exposure risk with implementation of the project. In addition, several other conditions, including the potential presence of aerially deposited lead, lead-based paint (LBP), asbestos-containing materials (ACMs), and lead chromate, were identified in the ISA as environmental concerns with some potential to affect the project during construction and demolition activities.

  Implementation of measure **HAZ-1** (refer to Section 2.2.5) prior to construction would reduce potential impacts from sites with a history of contamination. In addition, implementation of measure **PF HAZ-4** and **PF HAZ-5** (refer to Section 2.2.5) would address potential exposure impacts associated with previously unidentified contamination by providing directives that would be followed should soil and/or groundwater contamination be encountered during construction. Moreover, development of related projects in contaminated areas would require remediation in compliance with state and federal environmental regulations, thereby improving overall environmental quality. Implementation of measures **HAZ-2** and **PF HAZ-3** would address risks associated with ACMs, LBP, and lead chromate and ensure that the surrounding environment would not be exposed to risks related to releases of hazardous materials during bridge demolition or modification. Therefore, implementation of the project would not contribute considerably to cumulative impacts related to hazardous materials or hazardous waste in the region.
- **Air Quality:** Cumulative impacts related to air quality include impacts from local development as well as general growth in the project area. However, as with most development, the greatest source of emissions is vehicles, which can travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond local projects and, when wind patterns are considered, cover a larger area. Accordingly, the cumulative analysis for the proposed project's air quality analysis is the

South Coast Air Basin. The "plan" approach to determining cumulative impacts considers whether the proposed project would be consistent with local and regional planning efforts. As stated above, the proposed project consists of improvements along SR-91 and SR-57, including freeway mainline widening and modifications to various interchanges, ramps, and intersections. Because the project is listed in the Southern California Association of Governments 2016 financially constrained Regional Transportation Plan/Sustainable Communities Strategy (amendment #2) and 2017 Federal Transportation Improvement Program (amendment #11), both of which were found to be in conformity with the State Implementation Plan, impacts would not be cumulatively considerable. With implementation of avoidance and minimization measures **PF AQ-1** and **PF AQ-2**, as described in Section 2.2.6, *Air Quality*, to reduce and otherwise address particulate emissions, the contribution of the Build Alternative to a cumulative impact during construction and operation would not be considerable.

- **Noise:** The analysis of noise impacts provided in Section 2.2.8 of this Initial Study/ Environmental Assessment is a cumulative analysis in that it considers traffic noise generated by existing and future planned land uses as well as the effects of future planned transportation improvements on the noise environment. After implementation of noise abatement, the noise level increase attributable to the Build Alternative would be barely perceptible to the human ear in an outdoor environment; therefore, the proposed project would not contribute to cumulative adverse effects related to noise. Construction of the proposed project could overlap with some of the other projects within the RSA. Most of the projects are infill projects, and all of the transportation projects are along existing facilities. Caltrans provisions in Section 14-8.02, Noise Control, of the 2015 Standard Specifications and Special Provisions, as well as city and county municipal codes, would place restrictions and time limits on construction activities. With adherence to these codes, the cumulative impact associated with construction noise from the proposed project would be less than significant. In addition, because construction-related noise generated under the proposed project would be addressed with implementation of the noise control measures provided in **PF NOI-1** and **NOI-2** (refer to Section 2.2.8), the proposed project's construction-related impacts would not result in a cumulatively considerable impact.
- **Biological Environment:** The RSA used for assessing cumulative effects is based on the Biological Study Area (BSA), defined as the project footprint plus an additional 300-foot buffer and the surrounding quadrangles, including Anaheim, Orange, Whittier, La Habra, Yorba Linda, Prado Dam, El Toro, Tustin, Newport Beach, Seal Beach, and Los Alamitos. The RSA lies within the cities of cities of Anaheim, Fullerton, Orange, and Placentia. Most of the land is developed for urban and suburban uses. The Santa Ana River, which is found within the RSA, is the main regional wildlife corridor in the RSA.
- **Natural Communities**
  - *Mulefat Scrub:* Because there would be no impacts on mulefat scrub, there would be no cumulative impacts.
  - *Riverine Habitat:* The primary impact from the proposed project would be the permanent loss of riverine habitat due to expansion of the footings and piers underneath the west side of SR-91. The project would result in approximately 2.89 acres of temporary direct impacts on riverine habitat within the RSA. Temporary impacts would be avoided or reduced with implementation of prescribed measures **BIO-1, BIO-2, PF BIO-3, PF BIO-4, BIO-5** through **BIO-8, PF BIO-9,** and **BIO-10,** as listed in Section 2.3.1, and subsequent regulatory permits. In the context of the entire watershed as well as historic impacts on riverine habitat within the Santa Ana River, permanent project-related

impacts would be minor (0.01 acre). Cumulative impacts on the Santa Ana River have been substantial over time because of the high level of manipulation that has occurred. The proposed project would represent a negligible change in existing ambient conditions and would not contribute substantially to cumulative effects on the habitat.

- **Plant Species:** Based on the literature search and field surveys, there is no suitable habitat anywhere in the BSA for supporting federally or state-listed or otherwise special-status plant species, including any of the three plant species that are covered under the Orange County Transportation Authority (OCTA) M2 Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Therefore, there would be no temporary or permanent impacts on listed, special-status, or covered plant species from the proposed project. Because there would be no impacts on listed and non-listed special-status plants, which are not expected to be present within the BSA, the project would not contribute to cumulative impacts on any listed or non-listed special-status plant species or any covered plant species.
- **Animal Species**
  - *Special-Status Raptors:* Foraging habitat is present within the BSA for Cooper's hawk, white-tailed kite, American peregrine falcon, and osprey; no nesting habitat is present for any of these species. Project construction would have a temporary effect (e.g., noise, human presence) on Cooper's hawk, white-tailed kite, American peregrine falcon, and osprey, if present. The Build Alternative would have a permanent effect on foraging habitat wherever highway expansion or other new construction is proposed over currently undeveloped areas (e.g., the Santa Ana River, open ground). However, whatever foraging habitat is present within the BSA for these species is highly degraded and already substantially affected; therefore, the loss of the small amount of additional habitat needed to construct the project would not result in a substantial negative impact on any of these species or their local populations. Measures **BIO-1** through **PF BIO-3, BIO-5,** and **BIO-7** through **BIO-13**, listed in Section 2.3.4, would be incorporated to avoid and minimize impacts on special-status raptors, none of which are expected to nest within the RSA. All of the special-status raptor species that could or do occur in the RSA have generally adapted to hunting in suitable habitat in urban areas. These species are typically encountered in developed areas. Although past development has reduced nesting habitat for some or all of these species, resulting in a long-term cumulative impact on the nesting opportunities of these species, there is no longer any nesting habitat that could be affected within the RSA. Therefore, the project is not expected to contribute to cumulative impacts on raptors.
  - *Special-Status Bats*: The Build Alternative would result in the eviction and exclusion of at least one potentially large breeding colony of bats, resulting in temporary displacement, avoidance, and potential injury or death of the resident bats. Measures **BIO-1, BIO-5, BIO-6,** and **BIO-14** through **BIO-17** would be incorporated to reduce these impacts to the maximum extent feasible. The combination of regional development, transportation improvement, and habitat loss with the relatively low reproductive rates of bats (i.e., approximately one pup/year/adult female) will most likely result in slow recovery from impacts, making it difficult to make ultimate conclusions about the severity of cumulative impacts. This project, because of its implementation of extensive avoidance, minimization, and mitigation measures aimed at preventing impacts on bat species, is considered not likely to contribute to regional cumulative impacts on or declines in bat species.
  - *Special-Status Species (Non-Raptors, Non-Bats):* The analyzed birds use the Santa Ana River as foraging or roosting habitat; western pond turtle may use aquatic habitat in the BSA for foraging (although unlikely). The BSA and areas immediately upstream and

downstream encompass foraging habitat on the river. Populations of birds are considered to be stable in this area and either robust (e.g., California gull, American white pelican) relative to other areas in Orange County or small but otherwise healthy (e.g., white-faced ibis) given the atypical location. The proposed project may result in minor temporary impacts on these bird species as a result of visual disturbance, trash, and noise. In addition, it would permanently remove a small amount of foraging habitat on the Santa Ana River. It would not affect known nesting or rearing habitat and would not affect the nesting behavior of any of the species. Project features and measures **BIO-1** through **BIO-3, BIO-5, BIO-7** through **BIO-13,** and **BIO-17**, listed in Section 2.3.4, would be incorporated to avoid and minimize impacts on special-status non-raptor bird species, none of which are expected to nest within the BSA. The only species that is known to nest in the vicinity is great blue heron, and its nesting habitat is well outside the project footprint and BSA. Therefore, it would not be affected. Western pond turtle is a covered species under the OCTA M2 NCCP/HCP, which requires focused turtle surveys whenever there is ground disturbance in or near aquatic habitat. However, the aquatic habitat that is present in the BSA is not suitable for supporting this species, and focused surveys have been determined to be not necessary.

Past disturbance in this area has entailed general maintenance and management of the Santa Ana River, including construction of levees, weirs, and basins; construction of other bridges over the river; and expansion of SR-91 on the east side of the bridge. This portion of the river is in a high-traffic part of Orange County and experiencing constant high-level disturbance from humans in the surrounding upland areas. Historic development in the uplands surrounding the BSA, as well as current general usage of the area, has had and continues to have a cumulative impact on all of the aforementioned species. However, impacts from the proposed project would be very minor and would not be expected to meaningfully contribute to cumulative impacts in the area with incorporation of measures **BIO-1** through **PF BIO-3, BIO-5, BIO-7** through **BIO-13,** and **BIO-17,** listed in Section 2.3.4.

- *Nesting Birds and Other Bridge-, Crevice-, or Cavity-Dwelling Species*: Project impacts on nesting birds would not be adverse with implementation of project features, and avoidance and minimization measures **BIO-1** through **PF BIO-3, BIO-5, BIO-7** through **BIO-13, PF BIO-16,** and **BIO-17,** as listed in Section 2.3.4. These measures are generally standard for all projects, meaning that any given project is presumed to have no impact on general nesting bird populations because of nesting-season avoidance by the project and widespread implementation of nesting surveys and buffers to avoid impacts on nesting birds. Therefore, because the project would also conform to state and federal regulations regarding nest protection and nest avoidance, the project would not contribute to any cumulative impacts on nesting birds. The project would also not contribute to cumulative impacts on nesting birds that have occurred over time as a result of development in the region.

- **Threatened and Endangered Species**
  - *Coastal California Gnatcatcher:* The project is not expected to have any direct or indirect impacts on coastal California gnatcatcher and would not cumulatively contribute to a reduction in the number of California gnatcatchers in the region; therefore, the project would not contribute to cumulative impacts on coastal California gnatcatcher.
  - *Bald Eagle:* A bald eagle has been wintering on the Santa Ana River within the BSA for the last two winters, with other bald eagles sporadically occurring over the years as well (personal observation). The proposed project may result in minor temporary impacts on

bald eagles as a result of visual disturbance, trash, and noise. In addition, it would permanently remove a small amount of foraging habitat on the Santa Ana River. However, historically, Orange County has not been within the range of bald eagles, which have been rare in the past (ICF 2018) and have only recently become a more regularly occurring species in the county. Therefore, development of the BSA has had little, if any, cumulative impact on this species because bald eagles expanded into this area after development had already occurred. Consequently, the project is not expected to contribute to cumulative impacts on bald eagle.

- *California Least Tern:* California least terns use the Upper Santa Ana River in Orange County for foraging purposes. They began nesting approximately 2.8 miles downstream at Burris Basin in 2004 (ICF 2018) and were first found nesting at Anaheim Lake, approximately one mile north, in 2016. The BSA and areas immediately upstream and downstream encompass foraging habitat on the river. California least tern populations are considered stable in this area and potentially increasing in number in the surrounding area, given the expanded nesting efforts. The proposed project may result in minor temporary impacts on California least terns as a result of visual disturbance, trash, and noise. In addition, it would permanently remove a small amount of foraging habitat on the Santa Ana River. However, it would not affect known nesting or rearing habitat and would not affect nesting behaviors.

  Past disturbance in this area has entailed general maintenance and management of the Santa Ana River, including construction of levees, weirs, and basins; construction of other bridges over the river; and expansion of SR-91 on the east side of the bridge. This portion of the river is in a high-traffic part of Orange County and experiencing constant high-level disturbance from humans in the surrounding upland areas. Least terns began nesting downstream in 2004 (ICF 2018), long after the area was developed. Historically, they only occasionally foraged as far upstream as Anaheim; instead, they typically stayed within one mile or so of the coast (ICF 2018). Development of the area surrounding the BSA has had little, if any, cumulative impact on this species because it expanded into the area after development had already occurred. Therefore, the project is not expected to contribute to any cumulative impacts on California least tern.

- **Invasive Species:** The spread of invasive species is a realistic threat for any proposed project if invasive seeds or plant material is transferred to areas where they are not currently present. However, under standardized measure **PF BIO-9** (refer to Section 2.3.6), all equipment and materials would be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or next to construction areas. These include inspection and cleaning of construction equipment, with eradication strategies implemented should an invasion occur. In compliance with the executive order on invasive species, Executive Order 13112, and guidance from FHWA, landscaping and erosion control activities implemented under the project would not include species that have been listed as invasive. Under avoidance and minimization measure **BIO-10** (refer to Section 2.3.6), Wildlife Agencies would be required to review and approve restoration plans prior to any revegetation efforts. With implementation of the aforementioned measure, impacts related to invasive species would not be anticipated to result from construction of the Build Alternative. With implementation of measures **PF BIO-9** and **BIO-10,** the proposed project would not make a cumulatively considerable contribution to the spread of invasive species in the RSA.

2.4.4 Resource Evaluated for Cumulative Impacts

The following discussion of potential cumulative impacts is presented by environmental resource area. The reasonably foreseeable projects considered in this analysis are presented in Table 2.1.1-2 and shown in Figure 2.1.1-2. Most of the projects are infill projects; the transportation projects are all located along existing facilities. The following resources are evaluated in this section for cumulative impacts: community impacts, traffic and transportation/pedestrian and bicycle facilities, air quality, wetlands or other waters, and animal species.

2.4.4.1 PALEONTOLOGICAL RESOURCES

The RSA includes the area within 0.5 mile of each side of the project site. Construction activities may affect paleontological resources where excavations would disturb the Fernando Formation (at the surface and at depth) or Pleistocene-age alluvial deposits at depth (i.e., excavations that extend more than 10 feet below existing grades at locations that have been mapped as alluvial fan deposits or alluvial wash deposits). The Fernando Formation and Pleistocene-age alluvial deposits are assigned high paleontological potential.

The majority of excavation required for structures proposed under the Build Alternative is not anticipated to extend beyond 10 feet. However, drilled piles may extend beyond 50 feet; the depth is dependent on the site conditions encountered by the contractor and the recommendations of the geotechnical engineer. Excavation at the SR-91 westbound and SR-57 southbound connector is expected to reach a depth of 35 feet; the existing slope is non-native soil that was used as fill for the existing connector. The project components that are most likely to include earthwork that extends 10 feet deep or more involve the installation of bridge support columns or structures, box culverts, retaining walls, and underground utilities. All other project components, as currently proposed, are not anticipated to adversely affect paleontological resources. The project would incorporate avoidance and minimization measures (e.g., measure **PAL-1**) to ensure that any impacts associated with construction activities would be minimized should paleontological resources be uncovered. Other development projects in the RSA could disturb nonrenewable paleontological resources. However, because these projects would be discretionary actions and subject to CEQA, they would be required to incorporate measures to reduce impacts on unknown and nonrenewable paleontological resources. Therefore, construction activities associated with the project, in conjunction with other projects, would not result in cumulative impacts related to unknown and nonrenewable paleontological resources.

Once the project and other projects are operational, they would not have the potential to affect unknown and nonrenewable paleontological resources. Therefore, operation of the project, in conjunction with other projects, would not result in significant cumulative impacts under CEQA related to unknown and nonrenewable paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

The project would incorporate avoidance and minimization measures (e.g., measure **PAL-1**) to ensure that any impacts associated with construction activities would be minimized should paleontological resources be uncovered.

2.4.4.2 NATURAL COMMUNITIES

Coastal Sage Scrub

The project would result in the permanent loss of up to 1.69 acres of coastal sage scrub. Coastal sage scrub has been lost throughout Southern California for a variety of reasons (e.g., development, habitat conversion). It is likely that coastal sage scrub was lost within the BSA, as well as within the area in and surrounding the area, before development occurred. The area to be affected, which is southeast of the Kraemer/Glassell overpass at SR-91, would be completely and permanently lost as a result of development. However, because this patch of sage scrub is completely isolated from others by urban development, it has little value for wildlife movement. Its loss would not result in any notable habitat fragmentation because there is no surrounding habitat.

The proposed project is one of a series of projects covered under the OCTA M2 NCCP/HCP. The OCTA M2 NCCP/HCP was created to streamline permitting for take authorization regarding covered species that are regulated by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (CDFW) and facilitate construction along 13 covered freeway segments that are proposed for improvements. A portion of the M2 funding was set aside to provide mitigation under the OCTA M2 NCCP/HCP. OCTA acquired five preserves, with nearly 900 acres of natural habitat, in which 11 habitat restoration projects are planned; at least one more preserve, with a minimum of 250 acres, is planned for future acquisition. Under the OCTA M2 NCCP/HCP, any permanent impacts on coastal sage scrub habitat would be mitigated off-site through pre-approved mitigation at pre-designated restoration sites throughout the county.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project includes project features and avoidance and minimization measures **BIO-1, BIO-5, BIO-6, PF BIO-9,** and **BIO-10** (refer to Section 2.3.1), which are proposed to reduce impacts on coastal sage scrub habitat. No additional mitigation would be required for impacts on or the loss of coastal sage scrub. Although the loss of coastal sage scrub throughout the region has been substantial, the proposed project would not result in a substantial cumulative contribution to that loss.

2.4.4.3 WETLANDS AND OTHER WATERS

The project would result in permanent impacts on approximately 0.03 acre of non-wetland and less than 0.01 acre of wetland U.S. Army Corps of Engineers/Regional Water Quality Control Board (USACE/RWQCB) features and 0.01 acre of streambed and 0.01 acre of riparian CDFW resources. The primary impacts from the proposed project would be the permanent loss of jurisdictional waters due to the expansion of the piers underneath the west side of SR-91 as well as the permanent loss of jurisdictional waters that would be culverted. However, most of the drainages were constructed in uplands to convey upland flows. Permanent impacts would be mitigated through the OCTA M2 NCCP/HCP. As part of the M2 NCCP/HCP, permanent impacts on waters and particular habitat types have already been mitigated at pre-approved locations.

The Build Alternative would temporarily affect approximately 2.70 acres of non-wetland and 0.49 acre of wetland USACE/RWQCB features and 2.64 acres of streambed and 0.83 acre of riparian CDFW resources. Temporary impacts would generally be the result of equipment staging or site preparation within or adjacent to features, fugitive dust, the spread of non-native vegetation, and fluid spills. Temporary impacts may also result from relocation and/or

modification of concrete channels. Temporary impacts would be avoided or reduced with implementation of measures **BIO-1** through **BIO-10** in Section 2.3.2 and subsequent regulatory permits. In the context of the entire watershed, as well as historic impacts on the Santa Ana River and its surrounding tributaries, project-related impacts are considered minor, representing only a minor additional impact relative to what occurred when the waterways were initially channelized. Cumulative impacts on waters in the area have been substantial over time because of the high levels of manipulation that occurred; the proposed project would represent only a minor change in existing ambient conditions and would not substantially contribute to cumulative effects.

Given the amount of impact proposed, the Build Alternative could result in a cumulatively considerable contribution to a regional decline in jurisdictional resources. However, all direct impacts would be fully addressed with implementation of the proposed measures (refer to Section 2.3.2) and the project's participation in the M2 NCCP/HCP. The incremental increase in operational effects (if any) on jurisdictional waters and wetlands would not result in a cumulatively considerable contribution to the regional decline in jurisdictional waters and wetlands.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures **BIO-1** through **BIO-10**, as described in Section 2.3.2, *Wetlands and Other Waters,* would reduce the extent of temporary and permanent impacts on jurisdictional features resulting from construction. In addition, impacts on waters of the U.S., including wetlands and non-wetland waters, would be permitted under Clean Water Act (CWA) Section 404 with a Letter of Permission through the Measure M2 Freeway Program's Standard Individual Permit and under CWA Section 401 with water quality certification through the State Water Resources Control Board. Under the preapproved mitigation program in the OCTA M2 NCCP/HCP, permanent project-related impacts on waters of the U.S. and waters of the state would be mitigated through restoration and monitoring in Aliso Creek. Under the terms of the agreement, the mitigation sites would need to be prepared and planted and restoration monitoring would need to commence before any fill material could be discharged into waters of the U.S.

Impacts on CDFW jurisdiction protected pursuant to California Fish and Game Code Section 1602, which requires a Streambed Alteration Agreement for impacts on the bed, bank, or channel, would be compensated for according to the OCTA M2 NCCP/HCP's Streambed Program, which provides guidance for compensating for streambed areas and riparian habitats under the jurisdiction of CDFW and approved by CDFW. Under this program, areas of CDFW jurisdiction that would be temporarily affected would be restored to pre-project condition, and areas that would be permanently and unavoidably affected would be compensated for at a pre-approved mitigation site under the OCTA M2 NCCP/HCP.

2.4.4.4 ANIMAL SPECIES

Special-Status Bats and Other Bridge-, Crevice-, and Cavity-Dwelling Species

The proposed project would result in eviction and exclusion of at least one potentially large breeding colony of bats in the SR-91 bridge over the Santa Ana River, resulting in temporary displacement, avoidance, and potential injury or death of the resident bats. With implementation of the avoidance and minimization measures described below, these impacts would be reduced to the maximum extent feasible. The combination of regional development, transportation improvements, and habitat loss with the relatively low reproductive rates of bats (i.e., approximately one pup/year/adult female) will most likely result in slow recovery from impacts.

This project, because of its extensive measures to prevent impacts, is not expected to contribute to regional cumulative impacts on bat species or declines in their numbers.

Avoidance, Minimization, and/or Mitigation Measures

Measures **BIO-1, BIO-5, BIO-6, BIO-15,** and **PF BIO-16** in Section 2.3.4 would be incorporated to avoid and minimize impacts on special-status bats and other species that may use crevices or cavities within the RSA, including on bridges. With implementation of avoidance and minimization measures, the contribution of the Build Alternative to a significant cumulative impact during the construction period would not be considerable.